Plant and Soil

International Journal on Plant – Soil Relationships

VOLUME 276 / 2005

Springer
the language of science

Plant and Soil

International Journal on Plant – Soil Relationships

Issued under the auspices of the Royal Netherlands Society of Agricultural Science

Editorial Board: M. Adams, *Melbourne, Australia*; C. Atkins, *Perth, Australia*; A.J.M. Baker, *Melbourne, Australia*; P. Bakker, *Utrecht, The Netherlands*; J. Barcelo, *Barcelona, Spain*; R.W. Bell, *Murdoch, Australia*; R.M. Boddey, *Rio de Janeiro, Brazil*; A.C. Borstlap, *Utrecht, The Netherlands*; J.W.G. Cairney, *Sydney, Australia*; I. Cakmak, *Istanbul, Turkey*; J.M. Cheeseman, *Urbana, IL, USA*; T.D. Colmer, *Perth, Australia*; D.E. Crowley, *Riverside, CA, USA*; D. Douds, *Wyndmoor, PA, USA*; P.J. Gregory, *Reading, UK*; P. Hinsinger, *Montpellier, France*; A. Hodge, *York, UK*; T. Kalapos, *Budapest, Hungary*; T.B. Kinraide, *Beaver, WV, USA*; H.J. Kronzucker, *Toronto, ON, Canada*; J. Lynch, *University Park, PA, USA*; J.F. Ma, *Kagawa, Japan*; P. Marschner, *Adelaide, Australia*; F.R. Minchin, *Aberystwyth, UK*; R.E. Munns, *Canberra, Australia*; C. Neill, *Woods Hole, MA, USA*; B. Nicolardot, *Reims, France*; P.J. Randall, *Canberra, Australia*; S. Recous, *Laon, France*; H. Schat, *Amsterdam, The Netherlands*; L. Stoumann Jensen, *Frederiksberg, Denmark*; C. Vance, *St. Paul, MN, USA*; J.K. Vessey, *Winnipeg, MB, Canada*; L. Wade, *Crawley, Australia*; F.J. Zhao, *Herfordshire, UK*; Y. Zhu, *Beijing, China*

Editor-in-Chief: H. Lambers, *The University of Western Australia, Crawley, Australia*

Managing Editors: P. Poot and L. Bultynck, *The University of Western Australia, Crawley, Australia*

Consulting Editors:

P. Ambus, *Roskilde, Denmark*
T.J. Bouma, *Yerseke, The Netherlands*
M. Brundrett, *Crawley, Australia*
B. Chen, *Beijing, China*
M. Corbeels, *Planaltina, Brazil*
M.F. Cotrufo, *Caserta, Italy*
M. Cramer, *Rondebosch, South Africa*
R.A. Dahlgren, *Davis, USA*
S.O. Duke, *University, USA*
D.J. Eldridge, *Sydney, Australia*
A. Escudero, *Salamanca, Spain*
J.E. Fernandez, *Sevilla, Spain*
J. Flexas, *Palma de Mallorca, Spain*
T.S. Gahoonia, *Copenhagen, Denmark*
T. George, *Canberra, Australia*
M. Geypens, *Leuven, Belgium*
X. Han, *Beijing, China*
S. Haefele, *Metro Manila, Philippines*
N.S. Harris, *Alberta, Canada*
E. Hofland, *Wageningen, The Netherlands*
J.W. Hopmans, *Davis, USA*
Dr. Inderjit, *Delhi, India*
E.J. Joner, *Aas, Norway*
T. Kaspar, *Ames, IA, USA*
C. Keller, *Aix-en-Provence, France*
P.K. Khanna, *Canberra, Australia*
Y. Kuzyakov, *Stuttgart, Germany*
R. Larkin, *Orono, ME, USA*
J. Lehmann, *Ithaca, NY, USA*
Y. Li, *Xinjiang, China*
E. Lombi, *Glen Osmond, Australia*
H. Majdi, *Uppsala, Sweden*
R. Merckx, *Leuven, Belgium*
R.J.K. Myers, *Andhra Pradesh, India*
A. Noble, *Bangkok, Thailand*
G. North, *Los Angeles, CA, USA*
C. Ong, *Nairobi, Kenya*
M. Peoples, *Canberra, Australia*
R.J. Reid, *Adelaide, Australia*
H. Rennenberg, *Freiburg, Germany*
I.T. Riley, *Adelaide, Australia*
A.M. Rychter, *Warsaw, Poland*
P.T. Rygiewicz, *Corvallis, OR, USA*
W. Schmidt, *Udine, Italy*
J. Six, *Davis, CA, USA*
S.E. Smith, *Adelaide, South Australia*
C. Tang, *Melbourne, Australia*
J.D. Tjepkema, *Orono, ME, USA*
B. Vanlauwe, *Nairobi, Kenya*
E. Visser, *Nijmegen, The Netherlands*
B. Wick, *Berlin, Germany*
F. Wiesler, *Hannover, Germany*
Z. Xu, *Brisbane, Australia*
X. Yan, *Guangzhou, China*

ISSN 0032-079X

All Rights Reserved
© 2005 Springer
No part of the material protected by this copyright notice may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without written permission from the copyright owner.
Printed in the Netherlands

PLANT AND SOIL

Contents Volume 276 Nos. 1–2 October 2005

Part 1

Fine root turnover in forest ecosystems

Guest editor:
Hooshang Majdi

Preface vii–viii

Measuring fine root turnover in forest ecosystems
H.Majdi, K. Pregitzer, A.-S. Morén, J.-E. Nylund and G.I. Ågren 1–8

Estimating root longevity at sites with long periods of low root mortality
P. Andersson and H. Majdi 9–14

Influences of root diameter, tree age, soil depth and season on fine root survivorship in *Prunus avium*
J.A. Baddeley, C.A. Watson 15–22

Fine root dynamics in a tropical rain forest is influenced by rainfall
J.J. Green, L.A. Dawson, J. Proctor, E.I. Duff, and D.A. Elston 23–32

Comparison of fine root dynamics in Scots pine and Pedunculate oak in sandy soil
B. Konôpka, J.C. Yuste, I.A. Janssens and R. Ceulemans 33–45

Part II

Regular Papers

Increased quantity and quality of coarse soil organic matter fraction at elevated CO_2 in a grazed grassland are a consequence of enhanced root growth rate and turnover
V. Allard, P.C.D. Newton, M. Lieffering, J.-F. Soussana, R.A. Carran and C. Matthew 49–60

Effect of drought and weed management on maize genotypes and the tensiometric soil water content of an eutric nitisol in south western Nigeria
J.O. Azeez, D. Chikoye, A.Y. Kamara, A. Menkir and M.T. Adetunji 61–68

Reduction of cadmium availability to tobacco (*Nicotiana tabacum*) plants using soil amendments in low cadmium-contaminated agricultural soils: a pot experiment
C. Keller, M. Marchetti, L. Rossi and N. Lugon-Moulin 69–84

Growth medium and phosphorus supply affect cluster root formation and citrate exudation by *Lupinus albus* grown in a sand/solution split-root system
L. Shu, J. Shen, Z. Rengel, C. Tang and F. Zhang 85–94

Leaf mechanical properties in sclerophyll woodland and shrubland on contrasting soils
J. Read, G.D. Sanson and B.B. Lamont 95–113

Goethite dissolution in the presence of phytosiderophores: rates, mechanisms, and the synergistic effect of oxalate
P.U. Reichard, S.M. Kraemer, S.W. Frazier and R. Kretzschmar **115–132**

Effects of aluminum on the growth of tea plant and activation of antioxidant system
F. Ghanati, A. Morita and H. Yokota **133–141**

A comparison of aluminum resistance among *Polygonum* species originating on strongly acidic and neutral soils
J.F. You, Y.F. He, J.L. Yang and S.J. Zheng **143–151**

Chemically assisted phytoextraction of heavy metal contaminated soils using three plant species
P. Zhuang, Z.H. Ye, C.Y. Lan, Z.W. Xie and W.S. Shu **153–162**

Phosphorus acquisition strategies within arbuscular mycorrhizal fungal community of a single field site
J. Jansa, A. Mozafar and E. Frossard **163–176**

Assessment of root system dynamics of species grown in mixtures under field conditions using herbicide injection and ^{15}N natural abundance methods: A case study with pea, barley and mustard
G. Corre-Hellou and Y. Crozat **177–192**

Effect of enhanced calcium supply on aluminum toxicity in relation to cell wall properties in the root apex of two wheat cultivars differing in aluminum resistance
A.K.M Zakir Hossain, T. Ohno, H. Koyama and T. Hara **193–204**

Belowground interactions in a vine (*Vitis vinifera* L.)-tall fescue (*Festuca arundinacea* Shreb.) intercropping system: water relations and growth
F. Celette, J. Wery, E. Chantelot, J. Celette and C. Gary **205–217**

Spatial and temporal variation of roots, arbuscular mycorrhizal fungi, and plant and soil nutrients in a mature Pinot Noir (*Vitis vinifera* L.) vineyard in Oregon, USA
R.P. Schreiner **219–234**

Tillage and nitrogen application effects on nitrous and nitric oxide emissions from irrigated corn fields
X.J. Liu, A.R. Mosier, A.D. Halvorson and F.S. Zhang **235–249**

Effects of different wetland plant species on fresh unweathered sulphidic mine tailings
E. Stoltz and M. Greger **251–261**

The symbiotic requirements of different *Medicago* spp. suggest the evolution of *Sinorhizobium meliloti* and *S. medicae* with hosts differentially adapted to soil pH
G. Garau, W.G. Reeve, L. Brau, P. Deiana, R.J. Yates, D. James, R. Tiwari, G.W. O'Hara and J.G. Howieson **263–277**

Effect of mannitol from *Laminaria japonica,* other sugar alcohols, and marine alga polysaccharides on *in vitro* hypal growth of *Gigaspora margarita* and root colonization of trifoliate orange
K. Kuwada, M. Kuramoto, M. Utamura, I. Matsushita, Y. Shibata and T. Ishii **279–286**

Mesocosms mimic natural meadows as regards greenhouse gas fluxes and potential activities of nitrifying and denitrifying bacteria
T. Kanerva, K. Regina, K. Rämö, K. Karhu, K. Ojanperä and S. Manninen **287–299**

Physiological and anatomical basis of differential tolerance to soil flooding of *Lotus corniculatus* L. and *Lotus glaber* Mill
G.G. Striker, P. Insausti, A.A. Grimoldi, E.L. Ploschuk and V. Vasellati **301–311**

Partial root drying effects on biomass production in *Brassica napus* and the significance of root responses
L. Wang, H. de Kroon, G.M. Bögemann and A.J.M. Smits **313–326**

Plant colonizers shape early N-dynamics in gopher-mounds
R.M. Canals, V.T. Eviner, D.J. Herman and F.S. Chapin III **327–334**

Quantifying the effect of rhizosphere processes on the availability of soil cadmium and zinc
T. Sterckeman, L. Duquène, J. Perriguey and J.-L. Morel **335–345**

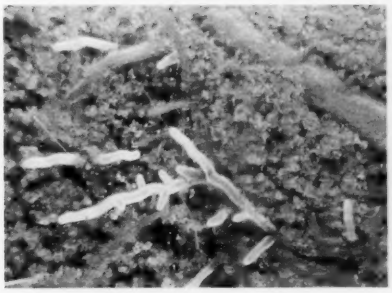
Root distribution and nutrient status of mycorrhizal and non-mycorrhizal *Pinus sylvestris* L. seedlings growing in a sandy substrate with lignite fragments
K. Baumann, B.U. Schneider, P. Marschner and R.F. Hüttl **347–357**

Uptake of Selenium and its antioxidant activity in ryegrass when applied as selenate and selenite forms
P. Cartes, L. Gianfreda and M.L. Mora **359–367**

Genetic analysis of maize root characteristics in response to low nitrogen stress
L. Chun, G. Mi, J. Li, F. Chen and F. Zhang **369–382**

Instructions for authors **383–386**

Available online
www.springerlink.com



Cover Photo:
Image of Norway spruce fine roots (<1mm) at depth of 30 cm, recorded by minirhizotron camera in southern Sweden. *Plant and Soil* Vol. 276, pp. vii–viii